

## Gray County

### Estimated Economic Impact of Agriculture, Food, and Food Processing Sectors

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Using the most recent IMPLAN data available (2014) adjusted for 2016, 17 agriculture, food, and food processing sectors were analyzed to determine their overall contribution to the Gray County economy.<sup>1</sup>

These 17 sectors have a total direct output of approximately **\$667.2 million** and support **808 jobs** in Gray County. Running the model for all 17 sectors simultaneously produces the following results:

| Agriculture, Food, and Food Processing Sector Contribution to Overall Economy |            |              |                                |  |                     |                                    |
|---|------------|--------------|--------------------------------|--|---------------------|------------------------------------|
| Impact Type <sup>2</sup>  | Employment | % Employment | Total Value Added <sup>3</sup> | Total Value Added % of Gross Regional Product <sup>4</sup> | Output <sup>5</sup> | Output % of Gross Regional Product |
| <b>Direct Effect</b>  | 808.0      | 17.52%       | \$298,804,627.24               | 57.33%   | \$667,195,282.15    | 128.01%                            |
| <b>Indirect Effect</b>  | 793.8      | 17.21%       | \$103,766,628.27               | 19.91%   | \$195,261,322.30    | 37.46%                             |
| <b>Induced Effect</b>   | 292.2      | 6.33%        | \$22,591,204.05                | 4.33%  | \$38,973,309.61     | 7.48%                              |
| <b>Total Effect</b>   | 1,894.0    | 41.06%       | \$425,162,459.56               | 81.57%   | \$901,429,914.06    | 172.95%                            |

As shown in the above table, agriculture, food, and food processing sectors support **1894 jobs**, or **41.06%** of the entire workforce in the county. These sectors provide a total economic contribution of approximately **\$901.4 million**, roughly **172.95% of the economy**.

Another metric used to calculate the importance of sectors in an economy is their value added as a percentage of GRP. Total value added by the 17 agriculture, food, and food processing sectors is approximately **\$425.2 million**, or **81.57% of the GRP**. This indicates that personal income, business income, and taxes generated by these sectors account for **81.57% of the total economy**.

The following tables document the overall summary numbers of the model, top industries affected by employment and output, and a listing of all industries that were analyzed.

<sup>1</sup> Article on building a contribution analysis in IMPLAN that avoids double counting:

[http://www.implan.com/index.php?option=com\\_content&view=article&id=660%3A660&catid=253%3AKB33&Itemid=70](http://www.implan.com/index.php?option=com_content&view=article&id=660%3A660&catid=253%3AKB33&Itemid=70)

<sup>2</sup> Direct, indirect, and induced effects sum together to estimate the total economic contribution in the state. **Direct effects** capture the contribution from agricultural and food products. **Indirect effects** capture the economic benefit from farms and agricultural businesses purchasing inputs from supporting industries within the state. **Induced effects** capture the benefits created when employees of farms, agricultural businesses, and the supporting industries spend their wages on goods and services within the state.

<sup>3</sup> Value added = labor income + indirect business taxes + other property type income.

<sup>4</sup> GRP = final demand of households + governments expenditures + capital + exports - imports - institutional sales.

<sup>5</sup> Output = intermediate inputs + value added.

In the top ten agriculture, food, and food processing sectors by employment, the beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming sector is the top employer with **769.3 employees**. This table also shows the amount of jobs that are created by the agriculture industry in Gray County.

| Top Ten Sectors by Employment  |                  |                  |
|--|------------------|------------------|
| Sector   | Total Employment | Total Output     |
| Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming | 769.3            | \$616,108,741.36 |
| Support activities for agriculture and forestry  | 282.8            | \$16,071,614.01  |
| Wholesale trade  | 161.7            | \$34,026,334.63  |
| Truck transportation   | 84.4             | \$13,462,584.96  |
| Grain farming  | 50.8             | \$101,665,053.91 |
| All other crop farming   | 36.6             | \$15,762,964.90  |
| Farm machinery and equipment manufacturing   | 33.9             | \$19,128,977.98  |
| Accounting, tax preparation, bookkeeping, and payroll services                             | 33.6             | \$1,436,541.13   |
| Monetary authorities and depository credit intermediation                                  | 30.6             | \$5,551,602.35   |
| Nursing and community care facilities  | 26.9             | \$1,517,773.95   |

The beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming sector directly contributes approximately **\$616.1 million** to the Gray County economy. The table below also shows the amount of revenue that is generated in other industries by having a strong agriculture industry.

| Top Ten Sectors by Output  |                  |                  |
|--|------------------|------------------|
| Sector   | Total Employment | Total Output     |
| Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming | 769.3            | \$616,108,741.36 |
| Grain farming  | 50.8             | \$101,665,053.91 |
| Wholesale trade  | 161.7            | \$34,026,334.63  |
| Farm machinery and equipment manufacturing   | 33.9             | \$19,128,977.98  |
| Support activities for agriculture and forestry  | 282.8            | \$16,071,614.01  |
| All other crop farming   | 36.6             | \$15,762,964.90  |
| Dairy cattle and milk production   | 23.8             | \$15,407,160.72  |
| Truck transportation   | 84.4             | \$13,462,584.96  |
| Owner-occupied dwellings   | 0.0              | \$12,577,338.91  |
| Animal production, except cattle and poultry and eggs                                      | 16.4             | \$7,123,474.44   |

Below is a summary of all agriculture data with employment levels and output level. These values can tell how many jobs are represented by each agriculture, food, and food processing sector and the output they contributed to the Gray County economy.

| <b>All Agriculture, Food, and Food Processing Sectors</b>                                  |                         |                     |
|--|-------------------------|---------------------|
| <b>Sector</b>  | <b>Total Employment</b> | <b>Total Output</b> |
| Oilseed farming  | 0.6                     | \$4,633,654.00      |
| Grain farming  | 50.8                    | \$101,665,053.91    |
| Vegetable and melon farming  | 0.3                     | \$101,349.74        |
| Greenhouse, nursery, and floriculture production   | 0.7                     | \$172,812.07        |
| Cotton farming   | 1.9                     | \$755,708.18        |
| All other crop farming   | 36.6                    | \$15,762,964.90     |
| Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming | 769.3                   | \$616,108,741.36    |
| Dairy cattle and milk production   | 23.8                    | \$15,407,160.72     |
| Poultry and egg production   | 1.4                     | \$1,993,040.59      |
| Animal production, except cattle and poultry and eggs                                      | 16.4                    | \$7,123,474.44      |
| Bread and bakery product, except frozen, manufacturing                                     | 2.8                     | \$454,369.21        |
| Frozen cakes and other pastries manufacturing  | 0.1                     | \$16,818.97         |
| Fertilizer mixing  | 4.1                     | \$2,344,882.85      |
| Farm machinery and equipment manufacturing   | 33.9                    | \$19,128,977.98     |
| Lawn and garden equipment manufacturing  | 0.1                     | \$59,099.47         |
| Veterinary services  | 7.3                     | \$647,487.56        |
| Landscape and horticultural services   | 19.6                    | \$1,556,064.10      |

All 105 counties in Kansas have an IMPLAN model and an agriculture, food, and food processing contribution summary. These values do not factor in the retail environment of food sales. Food retail is important, but in order to provide the most accurate picture of what production agricultural and processing contributes to Gray County, the retail sector was omitted.